

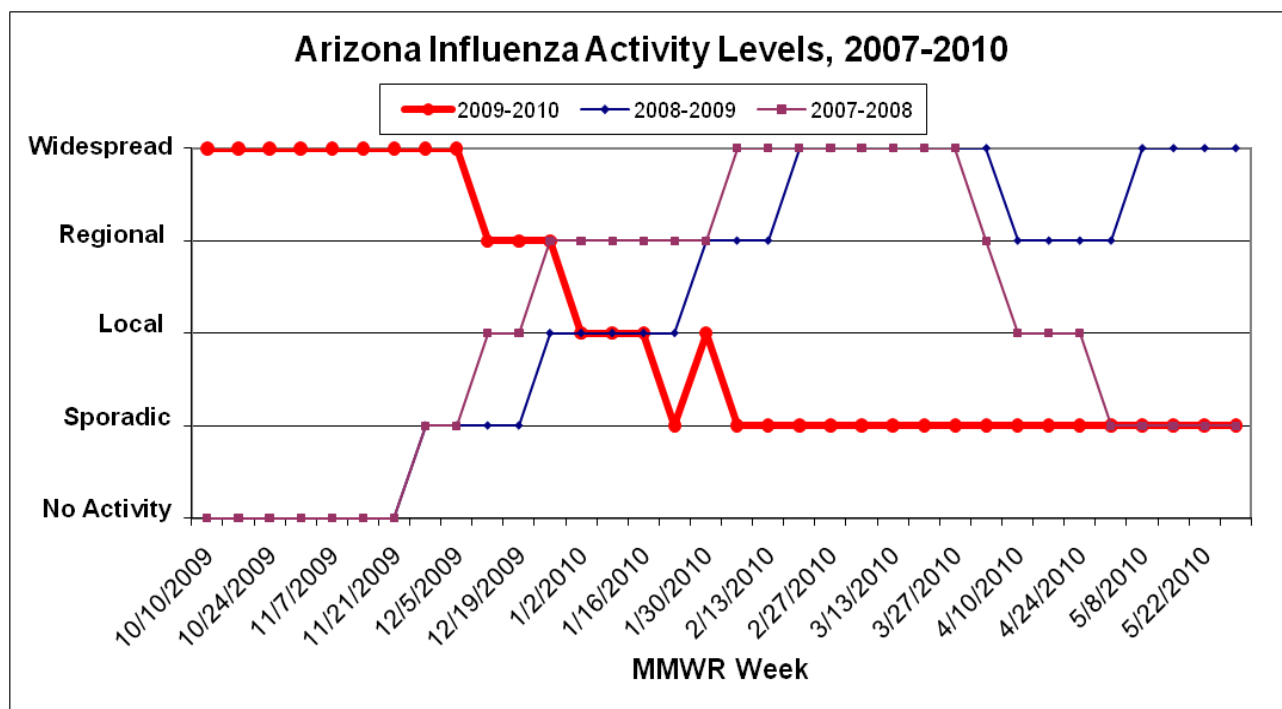
2009-2010 Influenza Season (Season began 10/4/2009)

Influenza activity highlights (for both seasonal and 2009 H1N1) are included in a separate report, posted weekly at <http://www.azdhs.gov/flu/h1n1/index.htm>. This report supplements that information.

- Data in this report are provisional and may change as more reports are received.
- The data included in this report represent a small proportion of the true number of cases of influenza. Many people do not visit the doctor when ill and doctors should not be expected to run tests on all patients exhibiting influenza-like symptoms.
- For guidance and information pertaining to the 2009 H1N1 influenza virus, please visit: <http://www.azdhs.gov/phs/oids/epi/flu/h1n1/index.htm> or <http://www.cdc.gov/h1n1flu/>.
- National influenza surveillance data are available at the CDC's Influenza Surveillance site (<http://www.cdc.gov/flu/weekly/fluactivity.htm>).
- Each influenza season is defined by surveillance weeks. The first day of the 2009-2010 influenza season was October 4th, 2009, or week 40 and the 2009-2010 surveillance season will continue through October 2nd, 2010, or week 39.

Arizona Influenza Activity Levels

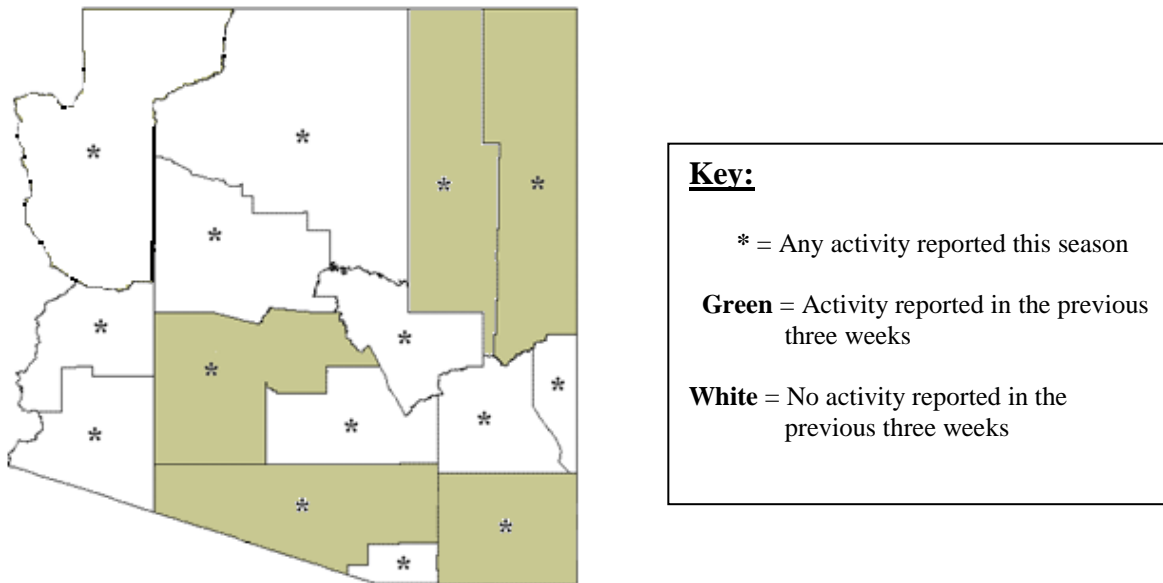
The graph below shows the influenza activity levels reported to CDC. For week 21, Arizona reported *sporadic* activity. Definitions of these reporting categories can be found at Definitions: <http://www.cdc.gov/flu/weekly/fluactivity.htm>.



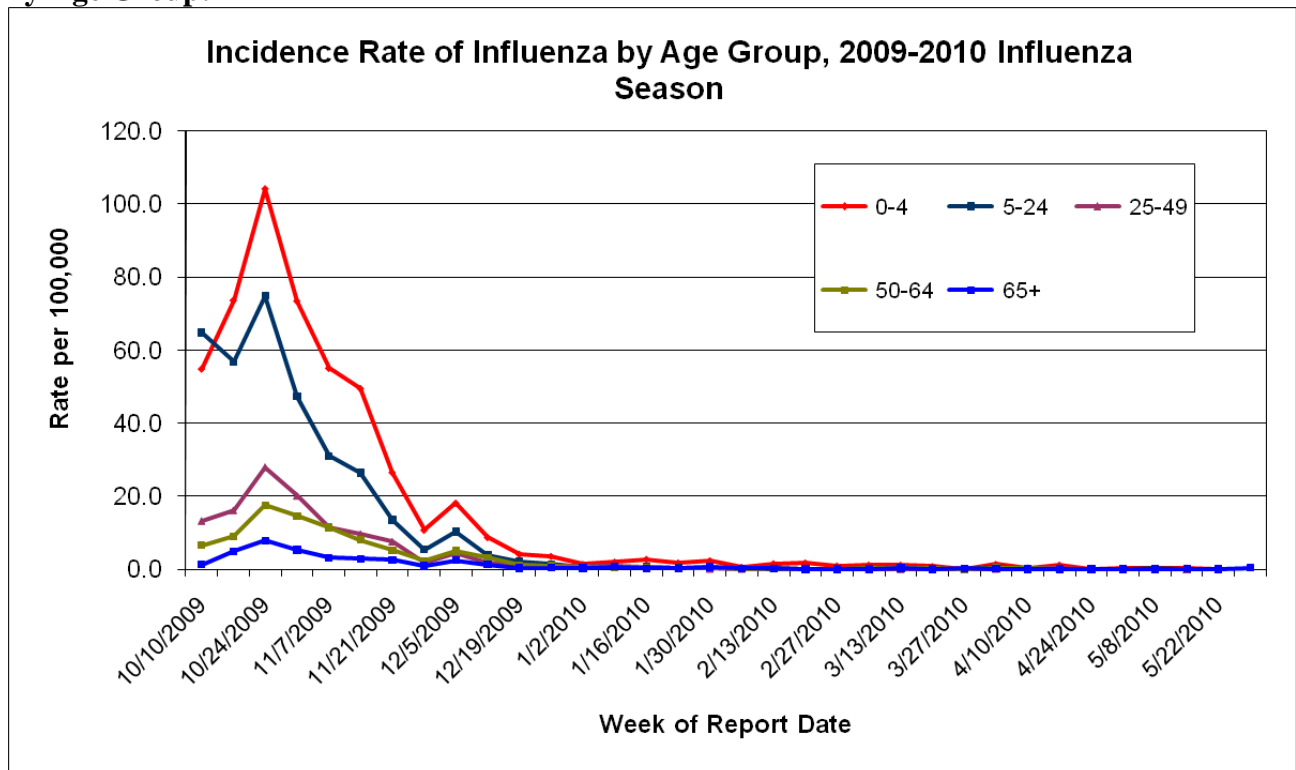
Laboratory-Confirmed Influenza

Positive influenza tests are reported to ADHS. These include many types of test (rapid tests, culture, PCR, DFA, etc.). Many of these do not distinguish 2009 H1N1 influenza from other influenza strains.

By County:



By Age Group:



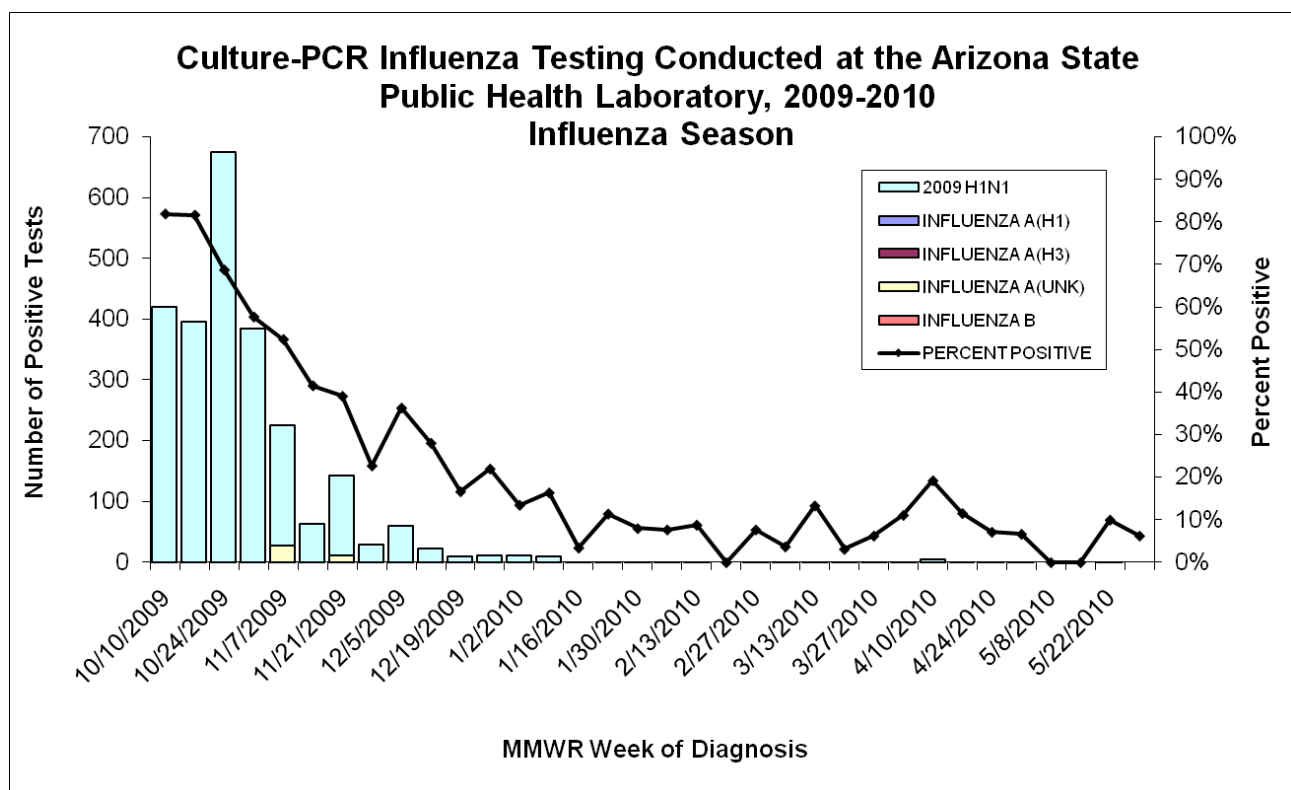
The results below show all positive influenza reported to ADHS for the current season compiled by age group and influenza type.

| AGE GROUP | Total Confirmed Influenza Cases (N=13,031) | Influenza A Cases (N=12,941) | Influenza B Cases* (N=33) | Unknown Type (N=45) |
|-------------------|--|------------------------------|---------------------------|---------------------|
| 0 to 4 years | 2,533 (19%) | 2,504 (19%) | 19 (39%) | 16 (36%) |
| 5 to 18 years | 4,944 (38%) | 4,925 (38%) | 9 (27%) | 10 (23%) |
| 19 to 49 years | 4,134 (32%) | 4,116 (32%) | 4 (12%) | 14 (32%) |
| 50 to 64 years | 951 (7%) | 944 (7%) | 5 (15%) | 2 (5%) |
| 65 years or older | 316 (2%) | 315 (2%) | 0 (0%) | 1 (2%) |
| Unknown age | 153 (1%) | 150 (1%) | 2 (6%) | 1 (2%) |

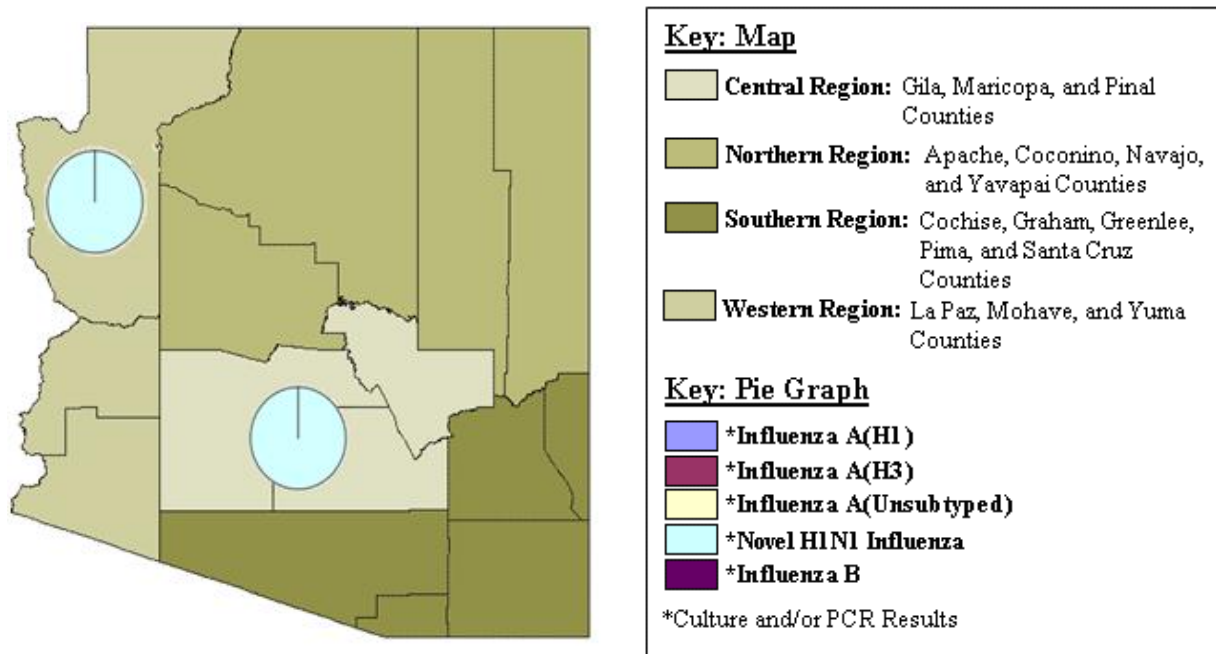
*An influenza B case was confirmed by PCR at the Arizona State Laboratory the week of 11/1. Rapid influenza B positive tests after 11/1 are included in these numbers.

Laboratory Surveillance

Specialized testing at the Arizona State Public Health Laboratory and certain labs in the state can detect further information about the type and subtype of influenza virus, including differentiating 2009 H1N1 influenza from other subtypes.



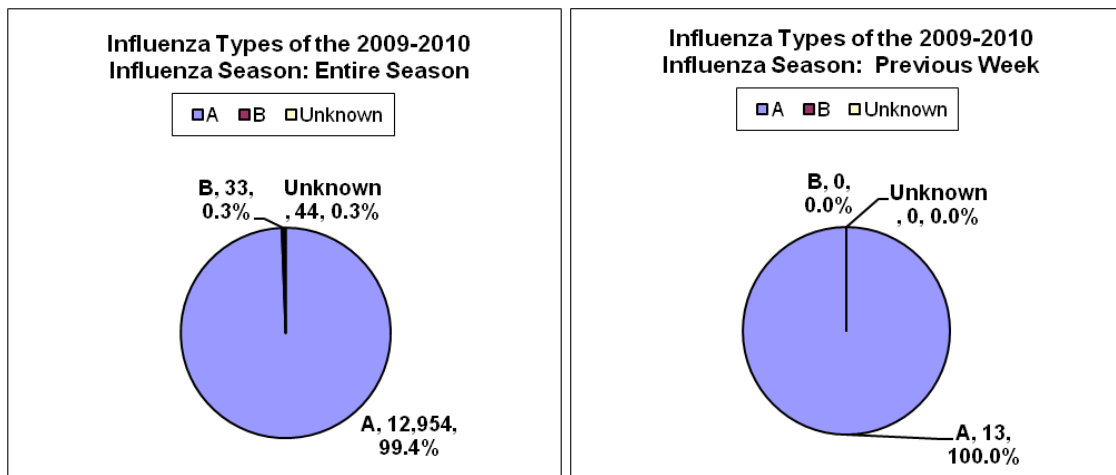
The results below show only culture and/or PCR results reported to ADHS from the Arizona State Laboratory or other laboratories across the state during the previous three weeks.



Influenza subtyping of culture or PCR results, by region, past three weeks

| Region | Influenza A(H1) | Influenza A(H3) | Influenza A(Unsubtyped) | 2009 H1N1 Influenza | Influenza B |
|----------|-----------------|-----------------|-------------------------|---------------------|-------------|
| Central | 0 (0%) | 0 (0%) | 0 (0%) | 1 (100%) | 0 (0%) |
| Northern | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) |
| Southern | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) |
| Western | 0 (0%) | 0 (0%) | 0 (0%) | 1 (100%) | 0 (0%) |
| Arizona | 0 (0%) | 0 (0%) | 0 (0%) | 2 (100%) | 0 (0%) |

The results below show all positive influenza test results reported to ADHS state during the previous week as well as for the current season.



Influenza typing and subtyping of all reported influenza tests

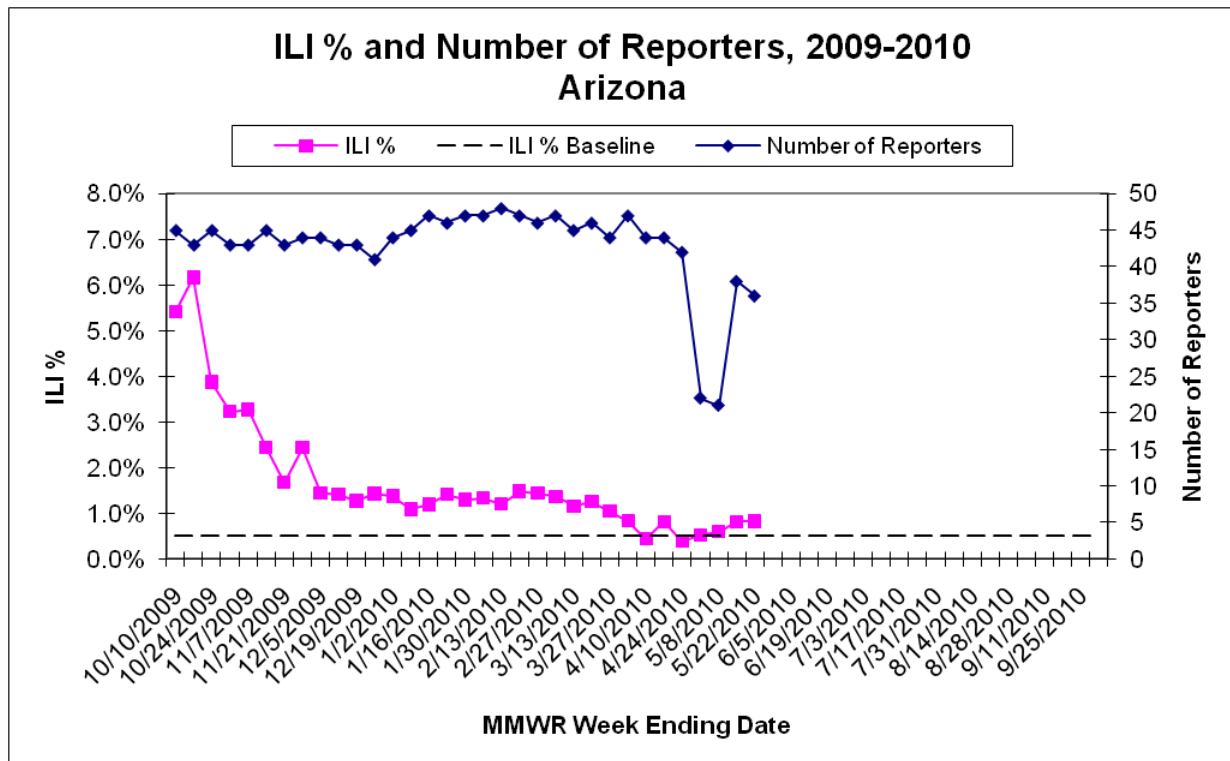
| | Season (2009-2010) | Percent Total (2009-2010) | Season (2008-2009) | Percent Total (2008-2009) | Season (2007-2008) | Percent Total (2007-2008) |
|----------------------------|-----------------------|---------------------------------|-----------------------|------------------------------|-----------------------|------------------------------|
| Total | 13,031 | 100% | 9,149 | 100% | 5168 | 100% |
| Influenza A | 12,954 | 99% | 7,262 | 79% | 2898 | 56% |
| Influenza B | 33 | 0% | 1,691 | 18% | 1900 | 37% |
| Unknown | 44 | 0% | 196 | 2% | 370 | 7% |
| Influenza Subtypes | 7,493 | 100% | 3,767 | 100% | 1181 | 100% |
| *2009 H1N1 | 6,389 | 85% | 2,243 | 60% | 0 | 0% |
| *Seasonal A(H1) | 0 | 0% | 459 | 12% | 184 | 16% |
| *Seasonal A(H3) | 1 | 0% | 382 | 10% | 234 | 20% |
| *Seasonal A(Unsubtyped) | 1,100 | 15% | 510 | 14% | 257 | 22% |
| Influenza B | 3 | 0% | 510 | 14% | 506 | 43% |

* Data for the bolded categories include all tests.

† Data for the subcategories include only culture and PCR tests conducted at the Arizona State Laboratory or other reporting laboratories.

Influenza-Like Illness (ILI) Surveillance from Sentinel Providers

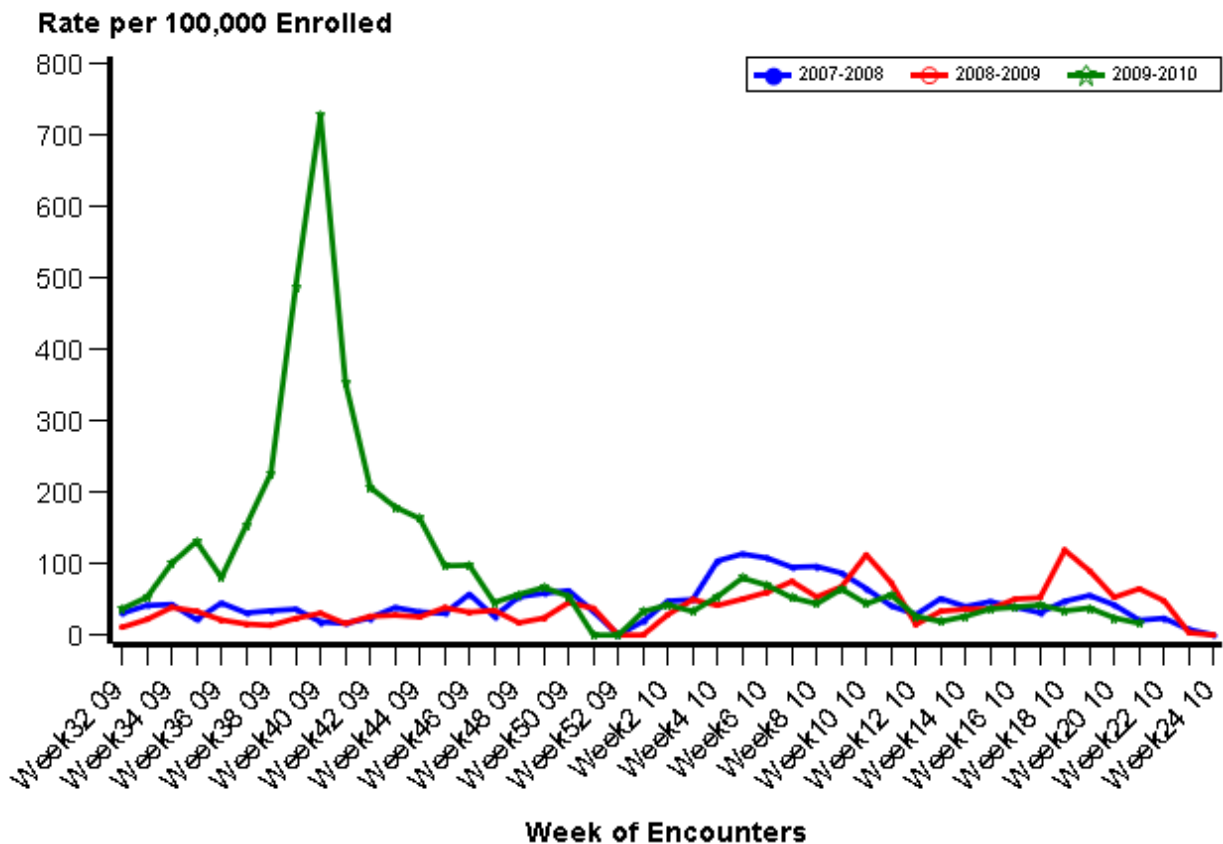
ILI is defined as a fever of at least 100°F plus either a cough or a sore throat. The proportion of patient visits to sentinel providers for ILI in the state was 0.8% for the week ending 5/29/2010 (week 21). The state baseline is 0.5%. In weeks when a relatively low number of reporting providers is present, the ILI proportion may not be representative for the entire state of Arizona.



School Surveillance for Influenza-Like Illness (ILI)

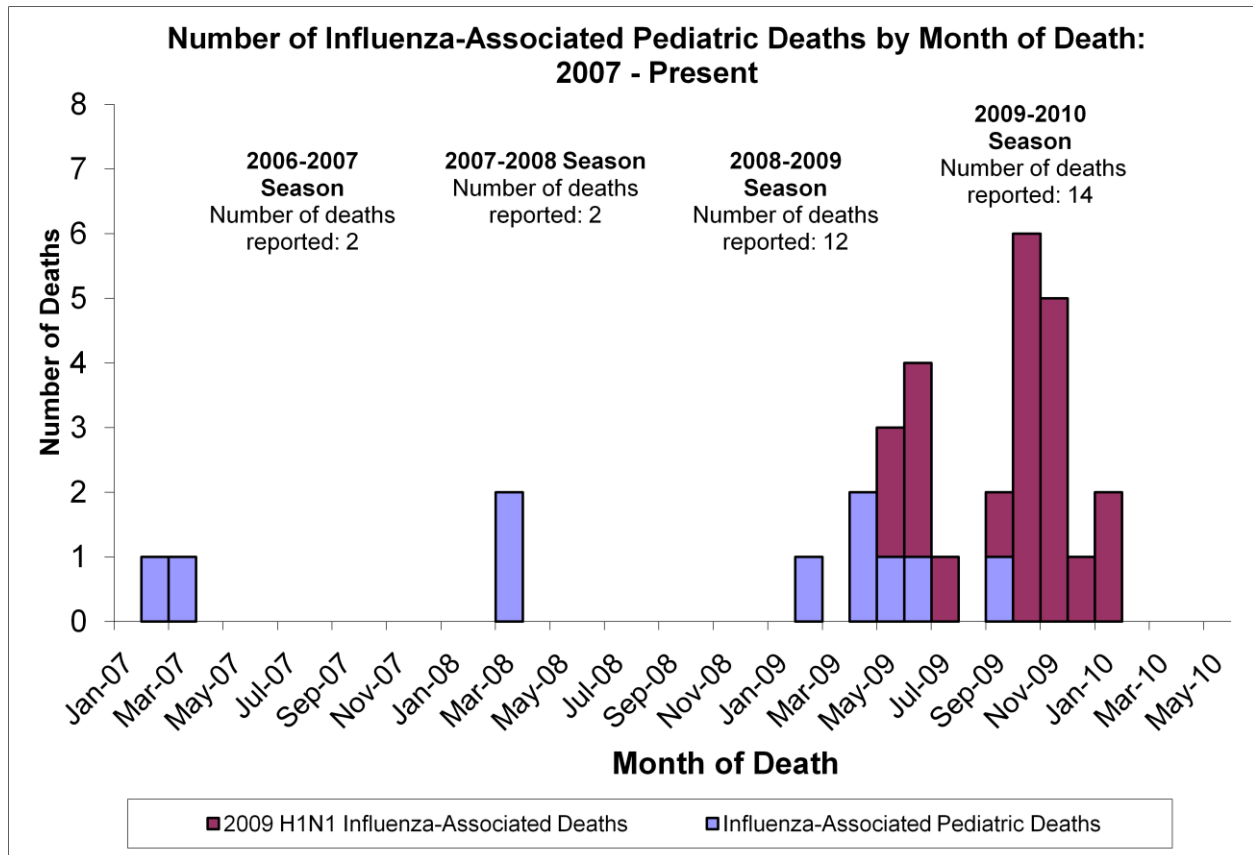
School nurses in 340 Arizona schools around the state use a computer program (the Child Health Indicator Program) for electronic management of student health records. The graph presents the weekly trend of ILI syndromes reported among students during the school years of 2007-2008, 2008-2009, and 2009-2010. The number of school nurse encounters are not diagnosed cases of communicable diseases but are based on the nursing codes that school nurses enter to track student conditions. Also, the numbers in the graph are only from schools that used CHIP during the school year.

Influenza-Like Illness Per School Enrollment in Arizona (per 100,000)



Mortality Surveillance

Fourteen influenza-associated pediatric deaths were reported to ADHS during the 2009-2010 influenza season. All fourteen deaths were confirmed to be associated with 2009 H1N1 influenza.



Epidemiologic Information for Confirmed 2009 H1N1 Influenza Cases, Since April 2009

| | Total Confirmed Cases (N=8,724) | Hospitalized Cases (N=1,895) | Confirmed Deaths (N=151) |
|-----------------------------------|---------------------------------|------------------------------|--------------------------|
| By Age Group: | | | |
| Children (≤18 Years) | 4,774 (55%) | 797 (42%) | 20 (13%) |
| Adults (>18 Years) | 3,951 (45%) | 1,099 (58%) | 131 (87%) |
| By Race/Ethnicity: | | | |
| American Indian or Alaskan Native | 552 (6%) | 227 (12%) | 25 (17%) |
| Asian or Pacific Islander | 49 (1%) | 13 (1%) | 3 (2%) |
| Black or African American | 184 (2%) | 103 (5%) | 5 (3%) |
| Hispanic or Latino | 1,363 (16%) | 531 (28%) | 37 (25%) |
| White Non-Hispanic | 1,472 (17%) | 535 (28%) | 81 (54%) |
| Other or Unknown | 5,105 (59%) | 487 (26%) | 0 (0%) |

Investigated 2009 H1N1 Influenza Hospitalized Cases and Deaths: Medical Progression & Underlying Conditions

| | Investigated Hospitalized Cases** (N=1,409) | Investigated Confirmed Deaths** (N=149) |
|---|---|---|
| Pneumonia at Time of Hospital Admission | 584 (41%) | 105 (70%) |
| Developed ARDS Prior to or While in Hospital | 260 (18%) | 110 (74%) |
| Asthma | 319 (23%) | 32 (21%) |
| Chronic Lung Disease (Not Including Asthma) | 255 (18%) | 55 (37%) |
| Chronic Heart or Circulatory Disease | 234 (17%) | 52 (35%) |
| Metabolic Disease (Including Diabetes) | 259 (18%) | 52 (35%) |
| Cancer in the Previous 12 Months | 66 (5%) | 17 (11%) |
| Pregnant | 129 (9%) | 5 (3%) |
| Immunosuppressive Condition (Including HIV Infection) | 153 (11%) | 37 (25%) |
| Neurological Disease | 184 (13%) | 31 (21%) |
| Other Chronic Disease | 265 (19%) | 54 (36%) |
| ≥1 Underlying Medical Conditions* | 878 (62%) | 129 (87%) |

Investigated 2009 H1N1 Influenza Hospitalized Cases and Deaths: Medical Progression & Underlying Conditions, by Age Group

| | Children (≤18 Years) (N=552)** | Adults (>18 Years) (N=879)** |
|---|--------------------------------|------------------------------|
| Pneumonia at Time of Hospital Admission | 205 (37%) | 382 (43%) |
| Developed ARDS Prior to or While in Hospital | 84 (15%) | 178 (20%) |
| Asthma | 135 (24%) | 186 (21%) |
| Chronic Lung Disease (Not Including Asthma) | 76 (14%) | 180 (21%) |
| Chronic Heart or Circulatory Disease | 40 (7%) | 200 (23%) |
| Metabolic Disease (Including Diabetes) | 23 (4%) | 240 (27%) |
| Cancer in the Previous 12 Months | 14 (3%) | 52 (6%) |
| Pregnant | 15 (3%) | 115 (13%) |
| Immunosuppressive Condition (Including HIV Infection) | 44 (8%) | 109 (12%) |
| Neurological Disease | 85 (15%) | 101 (12%) |
| Other Chronic Disease | 89 (16%) | 179 (20%) |
| ≥1 Underlying Medical Conditions* | 302 (55%) | 588 (67%) |

*Medical conditions include: asthma, chronic lung disease, chronic heart or circulatory disease, metabolic disease, cancer, pregnancy, immunosuppressive condition, neurologic disease, and other chronic diseases.

**Investigations for identified H1N1 hospitalizations and deaths are ongoing. Pertinent data may not be collected for all identified cases at time of the report, so data presented above are only for investigated cases.